

ATTORNEY DOCKET NO. 25006.0017U3
Application No. 09/780,929

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

Claim 1. (canceled).

Claim 2. (currently Amended) A nucleic acid molecule with endonuclease activity having the formula II:3'-X-Z-Y-5'wherein, X and Y are independently oligonucleotides of length sufficient to stably interact with a target nucleic acid molecule; Z is an oligonucleotide having a nucleotide sequence selected from the group consisting of 5'-AGAUAACGUGAAGAU-3' (~~SEQ ID NO:97 SEQ ID NO:97~~) and 5'-AAUGGCCUAUCGGUGCGA-3' (~~SEQ ID NO:98 SEQ ID NO:98~~).

Claims 3-11 (canceled).

Claim 12. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said chemical linkage is independently or in combination selected from the group consisting of phosphate ester amide, phosphorothioate, phosphorodithioate, arabino, and arabinofluoro linkages.

Claim 13. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said nucleic acid molecule is chemically synthesized.

Claim 14. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said nucleic acid molecule comprises at least one sugar modification.

Claim 15. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said nucleic acid molecule comprises at least one nucleic acid base modification.

Claim 16. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said nucleic acid molecule comprises at least one phosphate backbone modification.

Claim 17. (currently amended) The nucleic acid molecule with endonuclease activity of claim 14, wherein said sugar modification is selected from the group consisting of 2'-H, 2'-O-methyl, 2'-O-allyl, 2'-C-allyl, 2'-deoxy-2'-fluoro, and 2'-deoxy-2'-amino modifications.

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Claim 18. (currently amended) The nucleic acid molecule with endonuclease activity of claim 16, wherein said phosphate backbone modification is selected from the group consisting of phosphorothioate, phosphorodithioate, and amide modifications.

Claim 19. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said nucleic acid molecule comprises a 5'-cap, a 3'-cap, or both a 5'-cap and a 3'-cap.

Claim 20. (currently amended) The nucleic acid molecule with endonuclease activity of claim 19, wherein said 5'-cap is a phosphorothioate modification of at least one 5'-terminal nucleotide in said nucleic acid molecule.

Claim 21. (currently amended) The nucleic acid molecule with endonuclease activity of claim 19, wherein said 5'-cap is a phosphorothioate modification of at least two 5'-terminal nucleotides in said nucleic acid molecule.

Claim 22. (currently amended) The nucleic acid molecule with endonuclease activity of claim 19, wherein said 5'-cap is a phosphorothioate modification of at least three 5'-terminal nucleotides in said nucleic acid molecule.

Claim 23. (currently amended) The nucleic acid molecule with endonuclease activity of claim 19, wherein said 5'-cap is a phosphorothioate modification of at least four 5'-terminal nucleotides in said nucleic acid molecule.

Claim 24. (currently amended) The nucleic acid molecule with endonuclease activity of claim 19, wherein said 3'-cap is a 3'-3' inverted riboabasic moiety.

Claim 25. (currently amended) The nucleic acid molecule with endonuclease activity of claim 19, wherein said 3'-cap is a 3'-3' inverted deoxyriboabasic moiety.

Claim 26. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said nucleic acid cleaves a separate nucleic acid molecule.

Claim 27. (currently amended) The nucleic acid molecule with endonuclease activity of claim 26, wherein said separate nucleic acid molecule is RNA.

Claim 28. (currently amended) The nucleic acid molecule with endonuclease activity of claim 26, wherein said nucleic acid comprises between 12 and 100 bases complementary to said separate nucleic acid molecule.

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Claim 29. (currently amended) The nucleic acid molecule with endonuclease activity of claim 26, wherein said nucleic acid comprises between 14 and 24 bases complementary to said separate nucleic acid molecule.

Claim 30. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein said X and Y are independently of length selected from the group consisting of 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, and 20 nucleotides.

Claim 31. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein the length of X is equal to the length of Y.

Claim 32. (currently amended) The nucleic acid molecule with endonuclease activity of claim 2, wherein the length of X is not equal to the length of Y.

Claim 33. (currently amended) An isolated cell including the nucleic acid molecule with endonuclease activity of claim 2.

Claim 34. (previously presented) The isolated cell of claim 33, wherein said cell is a mammalian cell.

Claim 35. (currently amended) The isolated cell of claim 34, wherein said cell is a human cell.

Claim 36. (currently amended) An expression vector comprising a nucleic acid sequence encoding ~~at least one of the nucleic acid molecules~~ the nucleic acid molecule with endonuclease activity of claim 2, in a manner which allows expression of the nucleic acid molecule with endonuclease activity.

Claim 37. (previously presented) An isolated cell including the expression vector of claim 36.

Claim 38. (previously presented) The isolated cell of claim 37, wherein said cell is a mammalian cell.

Claim 39. (previously presented) The isolated cell of claim 38, wherein said cell is a human cell.

Claim 40. (currently amended) A pharmaceutical composition comprising the nucleic acid molecule with endonuclease activity of claim 2.

Claim 41 (withdrawn) A method for modulating expression of a gene in a plant cell by administering to said cell the nucleic acid molecule of claim 1 or claim 2.

Claim 42. (withdrawn) A method for modulating expression of gene in a mammalian cell by administering to said cell the nucleic acid molecule of claim 1 or claim 2.

Claim 43. (withdrawn) A method of cleaving a separate nucleic acid comprising, contacting the nucleic acid molecule of claim 1 or claim 2 with said separate nucleic acid molecule under conditions suitable for the cleavage of said separate nucleic acid molecule.

Claim 44. (withdrawn) The method of claim 43, wherein said cleavage is carried out in the presence of a divalent cation.

Claim 45. (withdrawn) The method of claim 44, wherein said divalent cation is Mg²⁺.

Claim 46. (currently amended) The expression vector of claim 36, wherein said vector comprises: a) a transcription initiation region; b) a transcription termination region; c) a nucleic acid sequence encoding ~~at least one~~ the nucleic acid molecule with endonuclease activity of claim 2; and wherein said nucleic acid sequence is operably linked to said initiation region and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

Claim 47. (currently amended) The expression vector of claim 36, wherein said vector comprises: a) a transcription initiation region; b) a transcription termination region; c) an open reading frame; d) a nucleic acid sequence encoding ~~at least one~~ the nucleic acid molecule with endonuclease activity of claim 2, wherein said sequence is operably linked to the 3'-end of said open reading frame; and wherein said nucleic acid sequence is operably linked to said initiation region, said open reading frame and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

Claim 48. (currently amended) The expression vector of claim 36, wherein said vector comprises: a) a transcription initiation region; b) a transcription termination region; c) an intron; d) a nucleic acid sequence encoding ~~at least one~~ the nucleic acid molecule with endonuclease activity of claim 2; and wherein said nucleic acid sequence is operably linked to said initiation region, said intron and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.

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Claim 49. (currently amended) The expression vector of claim 36, wherein said vector comprises: a) a transcription initiation region; b) a transcription termination region; c) an intron; d) an open reading frame; e) a nucleic acid sequence encoding ~~at least one~~ the nucleic acid molecule with endonuclease activity of claim 2, wherein said sequence is operably linked to the 3'-end of said open reading frame; and wherein said nucleic acid sequence is operably linked to said initiation region, said intron, said open reading frame and said termination region, in a manner which allows expression and/or delivery of said nucleic acid molecule.